PB81-176976

Synthetic Fuels Projects Status Report
Colorado, Montana, North Dakota, South Dakota
Utah, Wyoming

(U.S.) Environmental Protection Agency
Denver, CO

Nov 80

U.S. Department of Commerce
National Technical Information Service
NTIS.

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA 908/4-80-001		PB 81-176976

4. TITLE AND SUBTITLE	5. REPORT DATE
Synthetic fuels projects status report.	November, 1980
	6. PERFORMING ORGANIZATION CODE: 8EA

7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
Scott R. Grace and Terry L. Thoem	

9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT NO.
U.S. Environmental Protection Agency Region VIII Energy Policy Coordination Office 1860 Lincoln Street Denver, Colorado 80295	11. CONTRACT/GRANT NO.

12. SPONSORING AGENCY NAME AND ADDRESS	13. TYPE OF REPORT AND PERIOD COVERED: Final
	14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

Copies available through National Technical Information Service

16. ABSTRACT

Energy resources are abundant in the six Federal Region 8 States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming. This publication provides a compilation of available data on energy resources and projected levels of development.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Energy Synthetic Fuels	Rocky Mountain region	

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS (This Report): Unclassified	21. NO. OF PAGES
Release to public	20. SECURITY CLASS (This page): Unclassified.	22. PRICE

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE

EPA 908/4-80-001

United States
Environmental Protection
Agency

Region 8
1860 Lincoln Street
Denver, Colorado 80295

November
1980

PB81-176976

EPA

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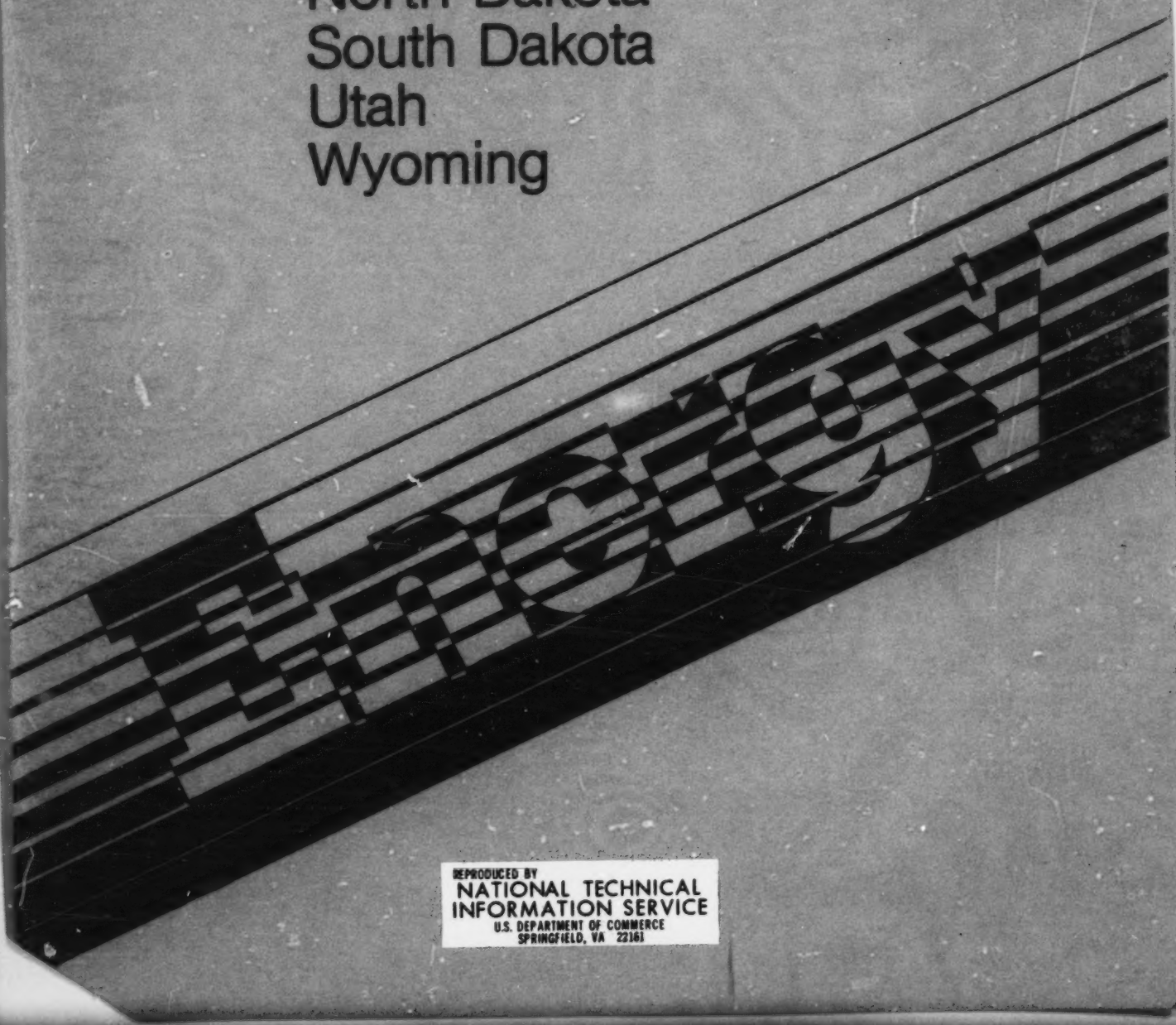

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SPRINGFIELD, VA 22161

SYNTHETIC FUELS PROJECTS
STATUS REPORT

NOVEMBER 1980

prepared by

ENERGY POLICY COORDINATION OFFICE
EPA, REGION VIII
DENVER, COLORADO

j.a

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

Ref: 8EA

Dear Colleague:

There is a great deal of interest in the status of proposed commercial synthetic fuels projects in Region VIII States. I am pleased to provide you with a compilation of information on the projects of which we are aware. This list is most certainly incomplete but may provide you with a perspective of the magnitude of development which is planned in the Region. We have not included any laboratory or small pilot plant synthetic fuels projects. Also, this report does not include information on projects designed to convert wastes to fuel. We plan to update this status report on a quarterly basis. It can be seen from data in this report that the capacity of the 39 synthetic fuels facilities being studied is about 1.4 million barrels per day of oil equivalent. This represents a significant portion of the President's and Congress' 1992 goal of 2 million barrels per day for the United States.

If you have comments, suggestions for improvement on the report, or other remarks please direct them to Mr. Terry L. Thoem, Director, Energy Policy Coordination Office.

Sincerely yours,

Roger L. Williams
Regional Administrator

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TABLE OF CONTENTS

	PAGE
Forward	i
Executive Summary	ii
Oil Shale Projects	1
Coal Gasification Projects	17
Coal Liquefaction Projects	28
Tar Sands Projects	37
Glossary	40

EXECUTIVE SUMMARY

On July 15, 1979, President Carter unveiled the Administration's plans to produce the equivalent of 2.5 million barrels of oil per day of synthetic fuel. Specific goals to achieve this 2.5 million BPD were as follows:

Synthetics from coal	1.0 to 1.5 million BPD
Oil Shale	0.4 million BPD
Biomass	0.1 million BPD
Unconventional gas	0.5 to 1.0 million BPD

On July 20, 1979, the Western Governors' Policy Office (WESTPO) met and adopted a four point affirmative action plan "to move America toward energy self-sufficiency". This plan stressed: 1) a phased process of synfuels development; 2) State-Federal partnerships to achieve short-term energy conservation; 3) State-Federal partnerships to mitigate undesirable socio-economic impacts; and, 4) improved intergovernmental consultation and concurrence.

On June 30, 1980, President Carter signed into law the Energy Security Act. This law provides for the establishment of the Synthetic Fuels Corporation to provide financial assistance for commercial facilities. It also calls for the production of synthetic fuels of 500,000 BPD by 1987 and 2,000,000 BPD by 1992. It is expected that the Western United States and Region VIII states, in particular, will be called upon to provide the major portion of these production goals.

Table 1 provides a summary listing of proposed commercial synthetic fuels plants in the Region. Additional detail may be found on the one page fact sheets developed on each project.

TABLE 1

Commercial Synthetic Fuel Activities

A. Oil Shale Projects

Page	Project	Approximate Size (BPD)	Status	State
1	White River	100,000	In courts	UT
2	Paraho	10,000	Demonstration design	UT
3	TOSCO	50,000	Feasibility study	UT
4	Geokinetics	20,000	Limited production	UT
5	Cathedral Bluffs	85,000	Module construction	CO
6	Colony	46,000	Construction	CO
7	Occidental	1,000	Construction	CO
8	Rio Blanco	76,000	Pilot construction	CO
9	Superior	12,000	Demonstration design	CO
10	Union	9,000	Construction	CO
11	Chevron	100,000	Planning	CO
12	Exxon	60,000	Planning	CO
13	NOSR	50,000-200,000	Planning	CO
14	Mobil	50,000	Planning	CO
15	Cities Service	50,000	Planning	CO
16	Equity	1,000	Limited production	CO

TOTAL Oil Shale = 720,000 BPD

B. Coal Gasification Projects

Page	Project	Approximate Size (MMCFD)	Status	State
17	Great Plains	125	Construction	ND
18	Panhandle Eastern	250	Planning	WY
19	Peoples Gas	250	Planning	ND
20	Lake DeSmet	250	Feasibility study	WY
21	Tenneco	250	Planning	MT
22	Mountain Fuel	275	Planning	UT
23	Washington Energy	?	Planning	MT
24	Rocky Mtn. Energy	250	Feasibility study	WY
25	Northern Res. Inc.	19	Prel. Feasibility study	MT
26	Utah International	125	Planning	MT

TOTAL Coal Gasification = 350,000 BPD OE

C. Coal Liquefaction Projects

Page	Project	Size (BPD methanol)	Status	State
27	Exxon	?	Planning	WY
28	Circle West	15,588	Feasibility study	MT
29	W.R. Grace	35,833	Feasibility study	CO
30	Wentworth Bros.	178,571	Planning	ND
31	Dunn Nokota	83,262	Feasibility study	ND
32	Mobil	40,000 (gasoline)	Planning	WY
33	American Methyl	178,571	Planning	WY
34	Northern Natural Gas	20-25,000	Planning	ND
35	Hampshire Energy	20,000 (gasoline)	Planning	WY

TOTAL Coal liquefaction = 250,000 BPD OE

D. Tar Sands Projects

Page	Project	Size (BPD)	Status	State
36	Asphalt Ridge	25,000	Pilot design	UT
37	Great National Corp.	8-25,000	Pilot planning	UT
38	Standard Oil of Indiana	50,000	Feasibility study	UT

TOTAL Tar Sands = 100,000 BPD

TOTAL Synfuels = 1,420,000 BPD OE

A. OIL SHALE PROJECTS

Project Type: Oil Shale

Project Name: White River Shale Project

Company(s): White River Shale Oil Corp. (Phillips Petroleum, Sunoco Energy Development Co. and Sohio Natural Resources Co.)

Project Location: Utah - Federal lease tracts U-a and U-b near Bonanza

Process Technology: Underground room and pillar, surface retort (Paraho, Union B, and Tosco)

EPA Permit Status: Expect PSD application by late 1980

Other Approvals, Dates: Detailed Development Plan submitted, Utah funding (about $8 million) for reservoir and dam on White River; BLM preparing EIS (Draft due in December 1980)

Construction Beginning Date: as early as late 1981

Production Amounts, Dates: 100,000 BPD by 1993

Present Status: Leases were suspended pending resolution of injunction related to land ownership. June, 1980 - U.S. Supreme Court ruled against Utah

Remarks:

Project Type: Oil Shale

Project Name: Paraho

Company(s): Paraho Development Corp. and others (12 companies to date)

Project Location: Utah-Uinta Basin near Bonanza; NE of UaUb (R25E, T10S)

Process Technology: Underground room and pillar, surface retort (Paraho)

EPA Permit Status: Preliminary discussions

Other Approvals, Dates: DOE grant for design work on demonstration plant, DOE grant of $3.1 million (7/9/80) for feasibility study for 30,000 BPD retort

Construction Beginning Date: June 1982

Production Amounts, Dates: Operation to begin 1984; 11,000 BPD by 1990

Present Status: Demonstration plant design work

Remarks: This project has moved from Anvil Points, Colorado. Limited research may continue at Anvil Points.

Project Type: Oil Shale

Project Name: TOSCO Sand Wash

Company(s): The Oil Shale Company (TOSCO)

Project Location: Utah-Uinta Basin - Sand Wash (R21E, T9S)

Process Technology: Underground room and pillar, TOSCO II surface retort

EPA Permit Status: PSD non applicability determination for exploratory underground mining activity

Other Approvals, Dates:

Construction Beginning Date: 1978

Production Amounts, Dates: 43,000-50,000 BPD beginning 1988

Present Status: Environmental assessment and engineering work underway; test mine begun

Remarks:

Project Type: Oil Shale

Project Name: Geokinetics-LOFRECO

Company(s): Geokinetics,Inc.

Project Location: Utah-Uinta Basin (R22E, T14S)

Process Technology: Horizontal in-situ

EPA Permit Status: PSD permit issued (10/80)

Other Approvals, Dates: DOE grant for feasibility study, (7/9/80) for $1.9 million

Construction Beginning Date: About 30 BPD production at the present time

Production Amounts, Dates: 200 BPD in 1983, 20,000 BPD in 1990

Present Status: Active production

Remarks: DOE PON for $9.1 million

Project Type: Oil Shale

Project Name: Cathedral Bluffs

Company(s): Occidental Oil Shale, Inc. and Tenneco

Project Location: Colorado - Federal lease tract C-b (R96W, T3S)

Process Technology: Modified in-situ and Lurgi surface retorting

EPA Permit Status: Conditional PSD for 5000 BPD, 12/15/77; Anticipated PSD application for 85,000 BPD by late 1980, NPDES permit under review

Other Approvals, Dates: Detailed Development Plan approved by DOI August 1977

Construction Beginning Date: 12/77

Production Amounts, Dates: 85,000 BPD (57,000 in-situ and 28,000 surface) by 1986

Present Status: Construction - 3 shafts are being sunk

Remarks: Need State SO_2 emission standard modification

Project Type: Oil Shale

Project Name: Colony

Company(s): Colony Development Operation (Exxon and TOSCO)

Project Location: Colorado - North of Parachute (R95W, T5S)

Process Technology: Underground room and pillar, surface retort (TOSCO II)

EPA Permit Status: Conditional PSD issued on 7/11/79 for commercial plant

Other Approvals, Dates: Final EIS issued, 404 permit approved

Construction Beginning Date: Summer, 1980

Production Amounts, Dates: 46,000 BPD in 1985

Present Status: First construction phase

Remarks:

Project Type: Oil Shale

Project Name: Occidental Logan Wash

Company(s): Occidental Oil Shale, Inc.

Project Location: Colorado - De Beque - Logan Wash (R97W, T7S)

Process Technology: Modified in-situ

EPA Permit Status: PSD for retort 7 and 8 (11/1/79; modified 6/27/80)

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 1000 BPD - "Burn" scheduled for November 1981 to June 1982

Present Status: Under construction

Remarks: DOE PON

Project Type: Oil Shale

Project Name: Rio Blanco Oil Shale

Company(s): Rio Blanco Oil Shale Inc. (Gulf and Standard of Indiana)

Project Location: Colorado - Federal lease tract C-a (R99W, T2S)

Process Technology: Combination of modified in-situ and surface retorts; demonstration plant will use Lurgi process

EPA Permit Status: PSD for 1000 BPD - 12/15/77; modification application anticipated late 1980; NPDES permit under review

Other Approvals, Dates: Detailed Development Plan approved 9/22/77; Colorado Joint Review Process for surface retort (2000 BPD) initiated 9/80

Construction Beginning Date: 1977

Production Amounts, Dates: Development and ignition of two retorts by 1981; 76,000 BPD commercial facility by 1987

Present Status: Rubbling began on demonstration project May 1980; Retort "0" burn ignited on October 13, 1980. Retort 1 scheduled for ignition in Spring 1981.

Remarks:

Project Type: Oil Shale

Project Name: Superior

Company(s): Superior Oil Co.

Project Location: Colorado - Piceance Creek/White River (R97W, T1N)

Process Technology: Underground mining, above-ground processing Superior process

EPA Permit Status: preliminary discussions

Other Approvals, Dates: Draft EIS 7/17/79 (BLM), final 7/80; DOE grant for demonstration plant design

Construction Beginning Date:

Production Amounts, Dates: Eventually three modules of 11,586 BPD

Present Status: Anticipate BLM negative decision on land exchange; Superior may utilize private lands near R98W, T6S for module

Remarks:

Project Type: Oil Shale

Project Name: Union Long Ridge Project

Company(s): Union Oil of California

Project Location: Colorado - Parachute Creek (R96W, T5S)

Process Technology: Underground room and pillar, Union B retorting

EPA Permit Status: Conditional PSD for module (7/31/79) PSD application submitted for 10,000 BPD (9/29/80)

Other Approvals, Dates: Colorado Mined Land Reclamation Board permit for prototype

Construction Beginning Date: Prototype - Summer 1980

Production Amounts, Dates: Prototype - 9000 BPD by 1983. Complete facility 50,000 BPD by 1990

Present Status: Construction on prototype

Remarks: Received $4 million DOE feasibility grant for upgrading unit

Project Type: Oil Shale

Project Name: Chevron

Company(s): Chevron Shale Oil Co.

Project Location: Colorado - Roan Creek (R99W, T5S) or Parachute Creek (R97W, T6S)

Process Technology: Surface mining (?) and surface retort

EPA Permit Status: Preliminary discussions on PSD

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: Initial demonstration plant by 1982; 50,000 BPD by 1988; 100,000 BPD by early 1990's

Present Status: Planning, environmental monitoring

Remarks:

Project Type: Oil Shale

Project Name: Exxon

Company(s): Exxon

Project Location: Colorado - Hunter Creek (R98W, T3S)

Process Technology: Underground room and pillar, surface retort - TOSCO II, Superior - TOSCO II

EPA Permit Status: PSD application to be submitted mid-1981

Other Approvals, Dates: Requested BLM to initiate land exchange (Fall 1979)

Construction Beginning Date:

Production Amounts, Dates: 30,000 BPD 1987; 60,000 BPD 1990

Present Status: Awaiting BLM decision on land exchange

Remarks:

Project Type: Oil Shale

Project Name: Naval Oil Shale Reserves - NOSR

Company(s): National Petroleum and Oil Shale Reserves - Department of Energy

Project Location: Colorado - near Rifle (R95W, T5S)

Process Technology: Investigating many options

EPA Permit Status: Preliminary PSD discussions; EIS scoping meetings

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 50,000-200,000 BPD

Present Status: Planning, environmental monitoring

Remarks:

Project Type: Oil Shale

Project Name: Mobil

Company(s): Mobil

Project Location: Colorado - Parachute Creek (R95W, T6S)

Process Technology: ?

EPA Permit Status: Preliminary discussions; submitted air monitoring plan

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 50,000 BPD

Present Status: Planning, environmental monitoring proposed

Remarks:

Project Type: Oil Shale

Project Name: Cities Service

Company(s): Cities Service

Project Location: Colorado - Parachute Creek (R97W, T6S)

Process Technology: modified in-situ

EPA Permit Status: Preliminary discussions on permit requirements and monitoring plans

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 50,000 BPD

Present Status: Planning

Remarks:

Project Type: Oil Shale

Project Name: Equity

Company(s): Equity

Project Location: Colorado - Black Sulphur Creek (R99W, T3S)

Process Technology: in-situ steam injection

EPA Permit Status: Nonapplicability PSD determination for present phase

Other Approvals, Dates:

Construction Beginning Date: 1979

Production Amounts, Dates: 1000 BPD

Present Status: Limited operation

Remarks: DOE PON - leach zone operation

B. COAL GASIFICATION PROJECTS

Project Type: Coal Gasification

Project Name: Great Plains

Company(s): Great Plains Gasification Associates

Project Location: North Dakota - Mercer County near Beulah

Process Technology: Lurgi

EPA Permit Status:

Other Approvals, Dates: North Dakota PSD permit November 1978; FERC Certificate of Public Convenience and Necessity 11/15/79

Construction Beginning Date: 8/80

Production Amounts, Dates: 125 MMCFD high BTU SNG

Present Status: Under construction; DOE provided $250 million loan guarantee; consumers groups including General Motors in Midwest have challenged cost of gas

Remarks:

Project Type: Coal Gasification

Project Name: Wycoal Gas Inc.

Company(s): Panhandle Eastern and Peabody Coal Co.

Project Location: Wyoming - Douglas

Process Technology: Lurgi gasification and methanation

EPA Permit Status: Preliminary discussions on PSD application

Other Approvals, Dates: State permit for reservoir issued, DOE cooperative agreement (7/9/80) for $13.2 million

Construction Beginning Date:

Production Amounts, Dates: 250 MMCFD high BTU SNG beginning in 1987

Present Status: Planning

Remarks:

Project Type: Coal Gasification

Project Name: Peoples Gas Dunn County Project

Company(s): Natural Gas Pipeline Co. of America (subsidiary of Peoples Gas)

Project Location: North Dakota - Dunn County

Process Technology: Lurgi

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 250 MMCFD high BTU SNG

Present Status: Awaiting North Dakota decision on PSD permit

Remarks:

Project Type: Coal Gasification

Project Name: Lake DeSmet

Company(s): Texaco and Transwestern Pipeline Co. (subsidiary of Texas Eastern Corp.)

Project Location: Wyoming - Lake DeSmet

Process Technology: Lurgi or Texaco

EPA Permit Status: Permits to be applied for in 1982

Other Approvals, Dates:

Construction Beginning Date: 1984

Production Amounts, Dates: 250 MMCFD high BTU SNG beginning in 1988

Present Status: Feasibility study (to be completed by 1981)

Remarks:

Project Type: Coal Gasification

Project Name: Tenneco

Company(s): Tenneco

Project Location: State line between Wibaux, Montana and Beach, N.D.

Process Technology: Lurgi

EPA Permit Status: Preliminary contact

Other Approvals, Dates: Tenneco has applied to Montana DNR for Dam and Reservoir on Beaver Creek (7/80); Tenneco has requested that Federal coal in the area be competitively leased (7/80)

Construction Beginning Date: 1986

Production Amounts, Dates: 250 MMCFD high BTU SNG beginning in 1990; plant and mine cost = $2.05 billion (1980 $)

Present Status: Environmental baseline studies since 1974; Monitoring to begin Fall 1980; Long Range Plan submitted to Montana DNR in April 1980.

Remarks: Have applied to DOE for $20 million in matching funds for engineering design.

Project Type: Coal Gasification

Project Name: Mountain Fuel Supply

Company(s): Mountain Fuel Supply Co. and Conoco

Project Location: Utah - Emery

Process Technology: Lurgi

EPA Permit Status: Preliminary discussions on permit application and environmental monitoring

Other Approvals, Dates: Site approval from Utah Interagency Task Force on Plant Siting

Construction Beginning Date: 1985

Production Amounts, Dates: 125 MMCFD high BTU SNG increasing to 275 MMCFD high BTU SNG

Present Status: Planning

Remarks:

Project Type: Coal Gasification

Project Name: Washington Energy

Company(s): Washington Energy Co.

Project Location: Montana - McCone County - Circle

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates:

Present Status: Planning - Awaiting DOE decision on feasibility study grant

Remarks:

Project Type: Coal Gasification

Project Name: Cherokee

Company(s): Rocky Mountain Energy Company Consortium

Project Location: Wyoming - near Rawlins

Process Technology: Lurgi and Koppers Totzek combination

EPA Permit Status: Permits will be applied for in early 1982

Other Approvals, Dates:

Construction Beginning Date: Early 1984

Production Amounts, Dates: 125 MMCFD beginning in 1986, increasing to 250 MMCFD by 1989

Present Status: Feasibility study (to be completed by January 1982); site selection late 1980

Remarks:

Project Type: Coal Gasification

Project Name: Northern Resources, Inc.

Company(s): Northern Resources, Inc.

Project Location: Montana - Billings

Process Technology: Lurgi

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date: Begin in 1981 (?)

Production Amounts, Dates: 19 MMCFD to be supplied to Exxon refinery

Present Status: Planning

Remarks: Would also purchase 3 million CFD of sour gas from Exxon, purify, and return along with produced gas

Project Type: Coal Gasification

Project Name: Crow Tribe

Company(s): Utah International, Pacific Lighting Corp. and Crow Tribe

Project Location: Montana - Big Horn County

Process Technology:

EPA Permit Status:

Other Approvals, Dates: Received $2.8 million DOE grant for feasibility study

Construction Beginning Date:

Production Amounts, Dates: 125 MMCFD by 1989

Present Status: Planning

Remarks:

Project Type: Coal Gasification

Project Name: Northern Resources

Company(s): Northern Resources, Inc. (subsidiary of Burlington Northern)

Project Location: Montana - Billings

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date: Late 1981 - early 1982

Production Amounts, Dates: 19MMCFD

Present Status: Preliminary feasibility study

Remarks:

C. COAL LIQUEFACTION PROJECTS

Project Type: Coal Liquefaction

Project Name: Exxon

Company(s): Exxon

Project Location: Wyoming - Campbell County

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: mid 1990's

Present Status: Planning

Remarks: Long range planning

Project Type: Coal Liquefaction

Project Name: Circle West Project

Company(s): Burlington Northern, Dreyer Bros., Inc., Basin Electric, and Resources Sciences Corp.

Project Location: Montana - McCone County - Circle

Process Technology:

EPA Permit Status: Preliminary discussions

Other Approvals, Dates: DOE feasibility grant received; discussions with Montana DNR on siting

Construction Beginning Date:

Production Amounts, Dates: 2175 TPD (15,588 BPD) Fuel grade methanol

Present Status: Feasibility study, environmental monitoring

Remarks:

Project Type: Coal Liquefaction

Project Name: W.R. Grace

Company(s): W.R. Grace and Co.

Project Location: Colorado - near Axial

Process Technology: Koppers - Totzek - will produce a slurry of methanol and CO_2 for pipeline transport with pulverized coal

EPA Permit Status: Preliminary discussions

Other Approvals, Dates: Awarded DOE feasibility study grant (7/9/80) for $786,477

Construction Beginning Date:

Production Amounts, Dates: 5000 TPD (35,833 BPD) of methanol beginning in 1986

Present Status: Planning, beginning feasibility study

Remarks:

Project Type: Coal Liquefaction

Project Name: Wentworth Brothers

Company(s): Wentworth Bros., Inc. for 19 utilities and industries

Project Location: North Dakota

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 178,571 BPD methanol

Present Status: Planning

Remarks:

Project Type: Coal Liquefaction

Project Name: Dunn Nokota Methanol Project

Company(s): Nokota

Project Location: North Dakota - Dunn County

Process Technology: Lurgi gasifiers and methanol synthesis units

EPA Permit Status:

Other Approvals, Dates: DOE grant for feasibility study 7/9/80

Construction Beginning Date: Spring 1983

Production Amounts, Dates: 11,618 short tons per stream day (83,262 BPD) of fuel grade methanol plus 3,050 BPD of "gasoline blending stock" beginning in 1986

Present Status: Feasibility study

Remarks:

Project Type: Coal Liquefaction

Project Name: Mobil

Company(s): Mobil Oil Co.

Project Location: Wyoming - Buffalo

Process Technology: Lurgi gasification and Mobil's M process for conversion to gasoline

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date: 1986

Production Amounts, Dates: 40,000 BPD gasoline beginning in 1990

Present Status: Planning - Awaiting DOE decision on feasibility grant

Remarks:

Project Type: Coal Liquefaction

Project Name: American Methyl

Company(s): American Methyl Fuel Corp.

Project Location: Wyoming - near Gillette

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 178,571 BPD methanol

Present Status:

Remarks:

Project Type: Coal Liquefaction

Project Name: Northern Natural Gas

Company(s): Northern Natural Gas of Omaha

Project Location: North Dakota

Process Technology:

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 20,000-25,000 BPD methanol

Present Status: Planning - Awaiting DOE decision on feasibility grant

Remarks:

Project Type: Coal Liquefaction

Project Name: Hampshire Energy

Company(s): Hampshire Energy, Inc.

Project Location: Wyoming - near Gillette

Process Technology: indirect gasification plus Mobil M

EPA Permit Status:

Other Approvals, Dates: DOE award of $4 million for feasibility study

Construction Beginning Date:

Production Amounts, Dates: 20,000 BPD of gasoline by 1985

Present Status:

Remarks:

...

D. TAR SANDS PROJECTS

Project Type: Tar Sands

Project Name: Asphalt Ridge

Company(s): Sohio Natural Resources Co.

Project Location: Utah - Uintah County - Asphalt Ridge (R21E, T4S)

Process Technology: Surface strip mining, surface solvent/water extraction

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date: Pilot - 1982; Full plant - 1988

Production Amounts, Dates: Pilot - 5000 BPD by 1983; Full plant - 25,000 BPD by 1990

Present Status: Design and permits application for pilot

Remarks:

Project Type: Tar Sands

Project Name: Great National Corporation Project

Company(s): Great National Corp. and Ford, Bacon and Davis Utah, Inc.

Project Location: Utah - Carbon County - Sunnyside Deposit

Process Technology: Surface strip mining, surface hot water/thermal extraction (hybrid)

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: Pilot -? Full plant - 8,000-25,000 BPD by 1989

Present Status: Pilot planning

Remarks:

Project Type: Tar Sands

Project Name: Standard Oil

Company(s): Standard Oil of Indiana

Project Location: Utah - Carbon County - Sunnyside

Process Technology: Surface mining, solvent extraction

EPA Permit Status:

Other Approvals, Dates:

Construction Beginning Date:

Production Amounts, Dates: 50,000 BPD

Present Status: Feasibility study

Remarks:

GLOSSARY

BPD	barrels per day - a measure of daily oil production
BPDOE	barrels per day, oil equivalent - a measure of production for synthetic fuels expressed in terms of an equivalent amount of natural crude oil
MMCFD	million standard cubic feet per day - a measure of synthetic or natural gas production
DOE	Department of Energy
PON	Program Opportunity Notice - a contractual arrangement between DOE and industry
NPDES	National Pollutant Discharge Elimination System - permit to discharge wastewater into the waters of the U.S.
EIS	Environmental Impact Statement
PSD	Prevention of Significant Deterioration of Air Quality - permit to emit air pollutants into the atmosphere; required for major new facilities
BLM	Bureau of Land Management
DOI	Department of Interior
FERC	Federal Energy Regulatory Commission
SNG	Synthetic Natural Gas
BTU	British Thermal Unit - a unit of measure of heat required to raise the temperature of one pound of water one degree Farenheit
DNR	Department of Natural Resources
TPD	Tons per day